

**Abstract of the Invention**

A communication system employs quantum entanglement by projecting photons through a nonlinear crystal. Some become parametrically down-converted into signal and idler photon pairs. The signal photons are projected to a receiver and the idler photons to a transmitter. The transmitter operator can alter the time width and a majority of the center wavelengths of the idler photons via a collapse event in the transmitter. Because of quantum entanglement, a corresponding change in the time width and center wavelengths of the signal photons as received at the receiver results. The purposeful causation of the collapse event or a lack of such purposeful causation can be used for binary communication. In addition, the sensing of an atmospheric condition may be performed by equating changes in received signal photon characteristics with changes in collapse conditions in the atmosphere.